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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/925,181

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Craig Schweinhart

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7590

04/08/2005

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Patent Docket Administration  
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EXAMINER

HABTE, ZEWDU

ART UNIT

PAPER NUMBER

2661

DATE MAILED: 04/08/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/925,181

Applicant(s)

SCHWEINHART ET AL.

Examiner

Zewdu Habte

Art Unit

2661

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-35 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2,4,5,7-9,11,12,14-16,18,19,21-23,25,26,28-30, 32, 33 and 35 is/are rejected.
- 7) ☒ Claim(s) 3,6,10,13,17,20,24,27,31 and 34 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 1/27/2003.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_.

**DETAILED ACTION**

***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-5, 8-12, 15-19, 22-26, 29, 30, 32,33 and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Montpetit (US 6366761 B1) in view of Liebowitz et al. (5812 545).

As to claims 1, 22, and 29 Montpetit discloses a method of scheduling packets within a terminal [Fig. 3, ground terminals 21a and terminal service applications 20a (considered a terminal) col. 5, lines 6-10], used in a satellite communications system [col. 2, lines 55-60], the method comprising: transmitting bandwidth allocation requests to a satellite based upon prior bandwidth allocations [Fig. 5, as illustrated in block 116] and packets stored within a plurality of queues of the terminal [col. 7, lines 28-30], the plurality of queues [Fig. 6, 130, 132, 134, 136 (plurality of queues)] being prioritized [col. 7, lines 30-35]; receiving current bandwidth allocations in response to the transmitted bandwidth allocation requests [col. 11, lines 12-13, (receiving bandwidth allocation response, illustrated in Fig. 5 at block 118 to the bandwidth requested, illustrated in Fig. 5 at block 114 or 116)]; and preparing a ... plan [col. 7, lines 54-55, an example bandwidth allocation for a frame, illustrated in Fig. 7] for transmitting the stored packets

Art Unit: 2661

based upon the current bandwidth allocations and the prioritization of the plurality of queues [col. 11, lines 16-19], wherein the schedule plan assigns the stored packets to packet transmission opportunities associated with the current bandwidth allocations [col. 8, lines 1-5, a ground terminal allocates (assigns) a specified number of slots per frame (part of current bandwidth) for transmission a corresponding number of data packets (packet-to-packet transmission opportunities)]. Montpetit does not specifically disclose a packet scheduler in order to prepare a schedule plan, but Liebowitz teaches scheduling packet to transmit performed by ground terminals [col. 15, lines 28-30]. It would have been obvious to one of ordinary skill in the art to combine Montpetit with Liebowitz for the purpose of having a schedule plan to transmit packets. The motivation is bandwidth management.

As to claims 2, 23 and 30 Montpetit discloses the plurality of queues in the transmitting step corresponding to user services [Fig. 5, P1 corresponds to queue 130, P2 corresponds to 132, P3 corresponds to 134, P4 corresponds to 136 (P1 is a higher level priority, quality of service or user service, than P2, P3, P4) that include a connection-oriented service and a connectionless service [col. 6, lines 47-52, multiple classes of service supported such as ATM (connection-oriented) or IP (connection less )].

As to claims 4, 25 and 32 Montpetit discloses that the plurality of queues in the transmitting step is prioritized using a weighting scheme that is based upon user services [col. 6, lines 1-14, priority status are defined and denoted as P1, P2, P3, and

Art Unit: 2661

P4; P1 priority status receive the highest quality of transmission service (weighting scheme)].

As to claims 5, 26 and 33, Montpetit discloses servicing the plurality of queues according to the schedule plan to selectively forward the stored packets to an uplink channel of the satellite communications system [packets queued according to their priority level P1 to P4, and transmitted also according to their priority level (selective forwarding), and guaranteed service is scheduled according to a plan].

As to claims 7, 28 and 35, Montpetit discloses that the packet transmission opportunities in the preparing step are time slots in a TDMA (time division multiple access) frame [Fig. 7, shows an assigned frequency (f) divided up in multiple time slots (t1, t2, ..., tn), that is going to be used to transmit packets].

As to claim 8, Montpetit discloses a terminal apparatus [Fig. 3, ground terminals 21a and terminal service applications 20a (considered a terminal)] for transmitting packets to a satellite communications system [Fig. 3, col. 2, lines 55-60], comprising: a plurality of queues [Fig. 6, 130, 132, 134, 136 (plurality of queues)] configured to store the packets [col. 7, lines 28-30], the plurality of queues being prioritized [col. 7, lines 30-35]; and a bandwidth-on-demand control logic [Fig. 3, ground terminal 21] configured to prepare ... [col. 7, lines 54-55, an example bandwidth allocation for a frame illustrated in Fig. 7] for transmitting the stored packets based upon current bandwidth allocations and the prioritization of the plurality of queues [col. 11, lines 16-19], the current bandwidth allocations being based upon prior bandwidth allocation [col. 2, lines 60-65, uplink bandwidth is allocated... to meet or exceed a user-selected standard of data

Art Unit: 2661

transmission service (bandwidth allocated according to prior service selection of the user)] and the stored packets [col. 7, lines 28-30], wherein the ... assigns the stored packets to packet transmission opportunities associated with the current bandwidth allocations [col. 8, lines 1-5, a ground terminal allocates (assigns) a specified number of slots per frame (part of current bandwidth) for transmission of a corresponding number of data packets (packet-to-packet transmission opportunities)]. Montpetit does not specifically disclose a packet scheduler in order to prepare a schedule plan, but Liebowitz teaches scheduling packet to transmit performed by ground terminals [col. 15, lines 28-30]. It would have been obvious to one of ordinary skill in the art to combine Montpetit with Liebowitz for the purpose of having a schedule plan to transmit packets. The motivation is bandwidth management.

As to claim 9, Montpetit discloses that the plurality of queues correspond to user services [Fig. 5, P1 corresponds to queue 130, P2 corresponds to 132, P3 corresponds to 134, P4 corresponds to 136 (P1 is a higher level priority, quality of service or user service, than P2, P3, P4) that include a connection-oriented service and a connectionless service [col. 6, lines 47-52, multiple classes of service supported such as ATM (connection-oriented) or IP (connectionless)].

As to claim 11, Montpetit discloses the plurality of queues are prioritized using a weighting scheme that is based upon user services [col. 6, lines 1-14, priority status are defined and denoted as P1, P2, P3, and P4; P1 priority status receive the highest quality of transmission service (weighting scheme)].

As to claim 12, Montpetit discloses a queue servicing logic [Fig. 3, ground terminal 21] coupled to the plurality of queues and configured to service the plurality of queues according to the schedule plan to selectively forward the stored packets to an uplink channel of the satellite communications system [col. 11, lines 16-19 and col. 7, lines 54-57, an example of bandwidth allocation (schedule plan) for a frame illustrated in Fig. 7. The table is indexed horizontally by frequencies, in the uplink communication spectrum (each frequency in the table is an up link channel)].

As to claim 14, Montpetit discloses that the packet transmission opportunities are time slots in a TDMA (time division multiple access) frame [Fig. 7, shows an assigned frequency (f) divided up in multiple time slots (t1, t2, ..., tn) that is going to be used to transmit packets].

As to claim 15, Montpetit discloses a satellite communications system [Fig. 3] comprising: a hub [Fig. 3, ground terminal 23a, satellite network management applications 24a, and network operations and control system 25a (considered a hub)] configured to control bandwidth allocations in conjunction with a satellite [col. 5, lines 11-17]; and a plurality of terminals [Fig. 3, ground terminals 21 and terminal service applications 20] configured to issue bandwidth allocation requests to the satellite, each of the terminals comprising, a plurality of queues [Fig. 6, 130, 132, 134, 136 (plurality of queues), col. 7, lines 28-29, the data packet send queue is maintained in the memory of a ground terminal (each terminal includes a send queue)] configured to store the packets, the plurality of queues being prioritized [col. 7, lines 30-35], and a bandwidth-on-demand control logic [Fig. 3, ground terminal 21] configured to prepare ... [col. 7,

lines 54-55, an example of bandwidth allocation for a frame illustrated in Fig. 7] for transmitting the stored packets based upon current bandwidth allocations and the prioritization of the plurality of queues [col. 11, lines 16-19], the current bandwidth allocations being based upon prior bandwidth allocation [col. 2, lines 60-65, uplink bandwidth is allocated... to meet or exceed a user-selected standard of data transmission service (bandwidth allocated according to a prior service selection of the user)] and the stored packets [col. 7, lines 28-30], wherein the ... assigns the stored packets to packet transmission opportunities associated with the current bandwidth allocations [col. 8, lines 1-5, a ground terminal allocates (assigns) a specified number of slots per frame (part of current bandwidth) for transmission of a corresponding number of data packets (packet to packet transmission opportunities)]. Montpetit does not specifically disclose a packet scheduler in order to prepare a schedule plan, but Liebowitz teaches scheduling packet to transmit performed by ground terminals [col. 15, lines 28-30]. It would have been obvious to one of ordinary skill in the art to combine Montpetit with Liebowitz for the purpose of having a schedule plan to transmit packets. The motivation is bandwidth management.

As to claim 16, Montpetit discloses the that plurality of queues correspond to user services [Fig. 5, P1 corresponds to queue 130, P2 corresponds to 132, P3 corresponds to 134, P4 corresponds to 136 (P1 is a higher level priority, quality of service or user service, than P2, P3, P4] that include a connection-oriented service and a



Art Unit: 2661

connectionless service [col. 6, lines 47-52, multiple classes of service supported such as ATM (connection-oriented) or IP (connection less)].

As to claim 18, Montpetit discloses that the plurality of queues are prioritized using a weighting scheme that is based upon user services [col. 6, lines 1-14, priority status are defined and denoted as P1, P2, P3, and P4; P1 priority status receive the highest quality of transmission service (weighting scheme)].

As to claim 19, Montpetit discloses a queue servicing logic [Fig. 3, ground terminal 21] coupled to the plurality of queues and configured to service the plurality of queues according to the schedule plan to selectively forward the stored packets to an uplink channel of the satellite communications system [col. 11, lines 16-19 and col. 7, lines 54-57, an example of bandwidth allocation (schedule plan) for a frame, illustrated in Fig. 7. The table is indexed horizontally by frequencies in the uplink communication spectrum (each frequency in the table is an up link channel)].

As to claim 21, Montpetit discloses that the packet transmission opportunities are time slots in a TDMA (time division multiple access) frame [Fig. 7, shows an assigned frequency (f) divided up in multiple time slots (t1, t2, ..., tn) that is going to be used to transmit packets].

### ***Allowable Subject Matter***

3. Claims 3, 6, 10, 13, 17, 20, 24, 27, 31 and 34 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Art Unit: 2661

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Zewdu Habte whose telephone number is 571-272-3115. The examiner can normally be reached on 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chau T Nguyen can be reached on 571-272-3126. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

ZH  
April 4, 2005



**KENNETH VANDERPUYE**  
**PRIMARY EXAMINER**

Zewdu Habte (Zed)  
Examiner  
Art Unit 2661